Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

GEOGRAPHICAL INFLUENCES IN THE DEVELOPMENT OF WISCONSIN *

By MARY DOPP

Teacher of Physiography in the Francis W. Parker High School of Chicago

CHAPTER VI. DEVELOPMENT OF AGRICULTURE

PAGE
Agriculture among the Indians 831
Agriculture among the French 832
  At Prairie du Chien . . . 832
    Prices of farm produce . 832
Soils of the State 833
Wheat raising 833
  On oak openings 833
  On prairies 834
    One crop paid for a prairie farm 834
  Home market 834
  First wheat shipped from Milwaukee 835
  Transportation 835
    Relative cost by railroad and wagon 835
  Failure of wheat crop . . 835
    Remedies suggested . . 835
    Reason for continuing single cropping 836
  Causes of persistence in wheat raising 836
  Decline of wheat raising . 838
PAGE
Diversified farming . . . 838
  Barley 839
  Corn 839
  Dairy farming 840
    Dairy products . . . 841
      Increase in number of cows 841
      Increase in number of factories and creameries . 842
      Babcock milk tester . . 842
      Rank of the State . . 842
      Hay crop 842
      Advantages of Wisconsin as a dairy State . 842
  Tobacco 843
  Cranberries 844
    Cause of Wisconsin's low yield 845
    Cranberry culture not a permanent occupation . 846
Comparative value of farm crops 846
Farm values 846

Agriculture began in Wisconsin in prehistoric times. When Nicolet came to Wisconsin in 1634 he found large, cultivated fields containing corn, melons, pumpkins, beans, tobacco, and other native plants in the vicinity of the Winnebago village on the shore of Green Bay. Carver (1766) found similar products at the thriving Indian village on an island at the east side of Lake Winnebago. The Sauks and Foxes cultivated large fields along the Wisconsin River, notably at Sauk Prairie. It is said that, until recently, Indian corn hills were still visible here on ground that had never been broken by the whites. The savages cultivated the young corn by hoeing toward the hill, and as they planted each time in the same spot the hill grew in size with each crop until it was often a foot or more in height.[1] When corn was no longer planted there the ground became covered with sod, which preserved the hills.

---

* Continued from pp. 401-412, 490-499, 585-609, 653-663, and 736-749.

[1] Hibbard, B. H.: Indian Agriculture in Southern Wisconsin, *Wis. Hist. Soc. Proc.*, 1904, p. 146.

The corn was picked by the Indians before it was fully ripe and packed in dry grass in a cellar in the ground which, when filled, was covered with straw and dry earth.[2] Travelers, traders, explorers, and early military expeditions were furnished with supplies from the stores of the savages. Even the troops which finally drove the Indians from their homes "filled their camp kettles either from the caches or the cornfields of the fugitives."[3] The first spots cultivated by white settlers were the fields of the Indians, and the first planting was with Indian seed. The corn and tobacco so highly prized by the savages are now two of Wisconsin's important crops.

The French did little farming. Each trading post, however, had its patch of cultivated ground which furnished the inhabitants with potatoes and corn. More extensive farming was carried on at Green Bay and Prairie du Chien than at the other posts. In 1816 a traveler reports that the farmers of Prairie du Chien were more thrifty and industrious than those of Green Bay. They raised wheat, barley, oats, peas, potatoes, and onions.[4] Small flouring mills, the stones for which had been cut from the granite rocks near by, were run by horse power, and were owned in partnership by two or three farmers. The surplus product was sold to the traders for goods or to the Indians for game and dressed deer skins.

In early days, the soil was cultivated in the most primitive fashion. The plow was a pointed stick drawn by oxen. The ground was scratched with this implement, and the planting of the seeds and further cultivation was done with a hoe. For a time, prices for farm produce were high. In 1816 flour was $10 a hundredweight, corn $3 a bushel, and eggs $1 a dozen.[5] These high prices were balanced by the equally expensive goods of the traders. Tea was $8 a pound, soap $1, tobacco $2, calico $2 a yard, clay pipes 40¢ each.[6]

The first considerable demand for provisions came from the lead miners, who paid dearly for their living. As we have seen, they induced farmers to come into the lead region in order to supply them with cheap provisions. It was not, however, until after the influx of immigration in 1832 that agriculture became really important.

---

[2] Hibbard, B. H.: Indian Agriculture in Southern Wisconsin, *Wis. Hist. Soc. Proc.*, 1904, p. 150.

[3] *Ibid.*, p. 155.

[4] Lockwood, J. H.: Early Times and Events in Wisconsin, *Wis. Hist. Coll.*, Vol. II, p. 112.

[5] Forsyth, T.: Voyage from St. Louis to the Falls of St. Anthony in 1819, *Wis. Hist. Coll.*, Vol. VI, p. 199.

[6] Lockwood, *op. cit.*, p. 113

The new immigrants came to a soil for the most part untouched and generally fertile, as indicated in Chapter I. The whole southeastern part of the state is covered by glacial clay on limestone and sandstone (Fig. 5, in Chap. I, p. 410). The soil of the southwestern part is a residual clay covered, particularly along the Mississippi River, by loess, which increases its fertility. Along Lake Michigan, and extending from Green Bay to south of Lake Winnebago, are two areas of red clays, chiefly lacustrine in origin. This region is low and the character of the soil is such as to render artificial drainage necessary. When drained properly the soil is very fertile. Sandy loams extend from Columbia, Green Lake, and Waupaca Counties, slightly north of west to the Mississippi River. This area is not so fertile as are the other regions, but is enriched in places by a covering of loess and also by muck and peat deposits.

In general the southern half of Wisconsin was a non-forested area. The prairies, while small, were numerous and occupied a considerable area. The oak openings did not present the obstacles to pioneer farming that the heavily wooded areas did, and at the same time they were free from the serious objections which held in the case of the prairies. The area under cultivation in 1836 was about 3,000 or 4,000 acres, and the amount of grain produced was a little over 40,000 bushels, mostly corn and buckwheat.[7] The census of 1840 gives the wheat production as 212,116 bushels; oats, 406,514; corn, 379,359; and potatoes, 419,608. 135,288 pounds of maple sugar were made.

In a review of the agricultural possibilities of Wisconsin in 1840, a writer in *Hunt's Merchants' Magazine* speaks of the culture of tobacco and hemp and the production of pork, beef, and wool for the eastern market, but states that Wisconsin was to derive its greatest wealth from the raising of wheat.[8]

Wheat was raised at first chiefly on the oak openings, the prairies being occupied only in a fringe around the edge until late in the 1840's.[9] There were several reasons for this avoidance of the prairies. (1) After it was broken the prairie sod had to be allowed to rot for a season before it gave returns of much account. The oak openings could be cultivated with greater ease and produced a crop the first season. (2) It was said that the prairie soil was so rich that it produced a too rapid growth of stalk and rendered the grain liable to rust.[10] (3) Winter wheat, which was used almost exclusively at first, was reasonably safe from being winter-killed in the well-sheltered fields of the woods and oak openings, while "on the prairies it uniformly failed."[11] The introduction of spring wheat permitted the utilization of the prairies. The prairies were not popular, until the high prices of 1855, said to be caused by the Crimean War, overcame all prejudice against any land that could raise wheat. They were then taken up rapidly. A letter dated at Rock Prairie, February, 1845, relates the experience of a farmer who bought 80 acres of prairie land and paid for it with the first crop of wheat, even though he hired all the work done. The items of the transaction are as follows:

---

[7] Dwinell, S. A.: Wisconsin As It Is and As It Was, p. 3.

[8] *Hunt's Merchants' Magazine*, Vol. X, p. 554.

[9] Hibbard, B. H.: History of Agriculture in Dane County, p. 125.

[10] *Hunt's Merchants' Magazine*, Vol. X, p. 554.

80 acres of land at $1.25	$100.00
Fencing	230.00
Breaking	160.00
Seed	75.00
Harrowing	90.00
Harvesting	150.00
Total	$805.00

The first crop yielded 26 bushels to the acre, which, deducting one-tenth for threshing, gave a yield of 1,872 bushels. This sold at 45 cents a bushel, or $842.40, giving a gain of $37.40.[12] This was by no means an uncommon experience. Where a man did the work himself his profits were larger, often amounting to several hundred dollars. By 1849 the wheat acreage was 306,132, with a yield of 4,282,131 bushels. Dodge, Dane, Rock, and Walworth Counties were the heaviest producers, raising 50 per cent. of the crop. No wheat was grown north and west of the Fox and Wisconsin Rivers, for, as has been shown, this country was practically unoccupied and unknown at this time, except by a few lumbermen.

Most of the wheat was sold in the home market. The southeastern section supplied the flood of immigrants then coming in, and who were shortly to become wheat producers. The surplus was sent to the lake ports. The Green Bay region supplied the home market and the demands of the lumbering population to the north, sending what was left east by water. The area in the southwestern part of the state furnished wheat to the lead miners, the military posts, Indian reservations, fur trading stations, and sent the surplus to St. Louis.[13]

---

[11] Hibbard, B H.: History of Agriculture in Dane County, p. 125.

[12] Sketches of the West, p. 23.

[13] Thompson, J. G.: Wheat Growing in Wisconsin, *Bull. Univ. Wis. No. 292*, p. 16.

The first load of wheat entered Milwaukee in 1839 and was sold for 50 cents a bushel. The first wheat was shipped from Milwaukee on July 8, 1841, on the schooner *Illinois*. It took three days to load the cargo of 4,000 bushels.[14] In 1849 Milwaukee, Kenosha, and Racine shipped 2,678,045 bushels of wheat and 183,557 barrels of flour, which is equivalent to a total of 3,504,000 bushels of wheat.[15]

All this wheat was brought to market by wagon. Not until 1851 was any railroad completed and that only a short line between Milwaukee and Waukesha. There were some plank roads extending west from Milwaukee and Racine (Fig. 12, Chap. III, p. 593), but they were not much better than the common dirt roads, which were almost or quite impassable in the spring. Farmers far removed from the Lake or Mississippi ports suffered greatly from lack of transportation facilities. Their wheat and other produce was often worth scarcely more than it cost to get it to market, while the goods they required were very expensive.

In a book published in 1855 an estimate was made of the comparative value of a ton of wheat and a ton of corn at given distances from market as affected by the cost of transportation by railroad or by wagon. The following gives a few items of the table:[16]

MILES TO MARKET	BY RAILROAD		BY WAGON ROAD	
	WHEAT	CORN	WHEAT	CORN
10	$49.50	$24 75	$49.50	$25.75
50	48.75	24.00	42 00	17.25
100	48.00	23.25	34.50	9.75
150	47.25	22.50	27.00	2.25
170	46.95	22 10	24.00	0.00
300	45.00	20.25	4.50	0.00
330	44.55	18.80	0.00	0.00

Closely following the first success in wheat growing, came failure. There were some light yields in the early 1840's on land that had been cropped for several years, but between 1847 and 1853 all varieties of wheat failed. Farmers were confronted by serious financial difficulties, for they had relied on their wheat to furnish them with other necessaries and to pay for their farms. Remedies of various sorts were suggested by the papers and books published at that time. Farmers were urged to choose sheltered places for planting, so as to protect the wheat from killing frost; to sow the seed in drills; to try other crops than wheat; to till the ground thoroughly; to rotate their crops; to raise more stock; and not to buy more land than they could pay for, because interest was very high.[17]

---

[14] *Mag. West. Hist.*, Vol. VI, p. 315.

[15] Thompson, *op. cit.*, p. 16.

[16] Gregory, John: Industrial Resources of Wisconsin, p. 236.

The high price of wheat in 1855 and the years immediately following, held the farmers to the one crop. An occasional good yield compensated for several poor ones, and they were always hoping for a good year. In 1858 there were shipped from the Lake Michigan ports 329,330 barrels of flour and 5,216,280 bushels of wheat. About five-sixths of it went through Milwaukee. The other grain shipments were small, 674,786 bushels of oats and 115,967 bushels of barley being the largest. In April, 1860, the price of wheat was $1.15, but it fell as soon as the large crop of 1860, which was nearly 30,000,000 bushels, came on the market. From 1864 to 1866 inclusive, the cinch bug destroyed the crop. In 1864 the yield was only 14,000,000 bushels. In 1865 and 1866 it was 20,300,000 bushels. The acreage of wheat increased from 1,062,097 in 1860 to 1,743,076 in 1868, and as the secretary of the Wisconsin State Agricultural Society stated in his report of that year, "so long as the present high prices ($1.75 to $2.00 a bushel) continue there will continue to be profit in wheat and farmers will continue in the old way."

The wheat crop was the main reliance of the farmers until about 1875, when the acreage was 1,800,000 and the product was 25,000,000 bushels. After that date the production declined steadily until in 1909 the crop was only 2,634,710 bushels from 140,630 acres, 63,488 bushels being durum wheat raised on 3,369 acres. The early importance and rapid spread of wheat raising was due to several causes. (1) The favorable climate and natural adaptability of the soil were fundamentally important. (2) Its cheapness, abundance, and fertility encouraged poor people to take up land. A farm could be paid for in a year or two if the wheat crop was good, as it was likely to be on freshly broken ground. The fact that wheat did better on new soil was a temptation to the farmer to take up unbroken land as often and in as large quantities as possible. (3) The introduction of machinery reduced the amount of hand labor necessary and also the expense of crop production. (4) When railroads were built into the state the wheat had easy access to the eastern markets. This increased the value of the crop. (5) Wheat was always in demand and commanded a ready sale. Receipts for wheat stored in warehouses were often used as money.[18] Money was scarce among the farmers, and this system was a great convenience. (6) For a long time it was generally believed that the climate of Wisconsin was too cool for corn to be cultivated profitably. Furthermore, corn was too bulky and too cheap to be shipped with profit, and would have to be converted into beef, pork, and mutton. (7) Stock raising required money, of which the settlers, as a rule, had but little. It is estimated that at the present time it costs about $20 an acre to equip an ordinary grain farm, $40 an acre for a hay farm, $70 an acre for a hog farm, and from $100 to $300 an acre for a first-class dairy farm.[19] While the costs were not the same as now during the period under discussion, the differences were probably of similar magnitude. Exploitative farming requires but a small degree of intelligence on the part of the farmer. On the other hand, any form of live stock farming requires more con-

---

[17] Gregory, *op. cit.*, p. 61

[18] Thompson, *op. cit.*, p. 25.

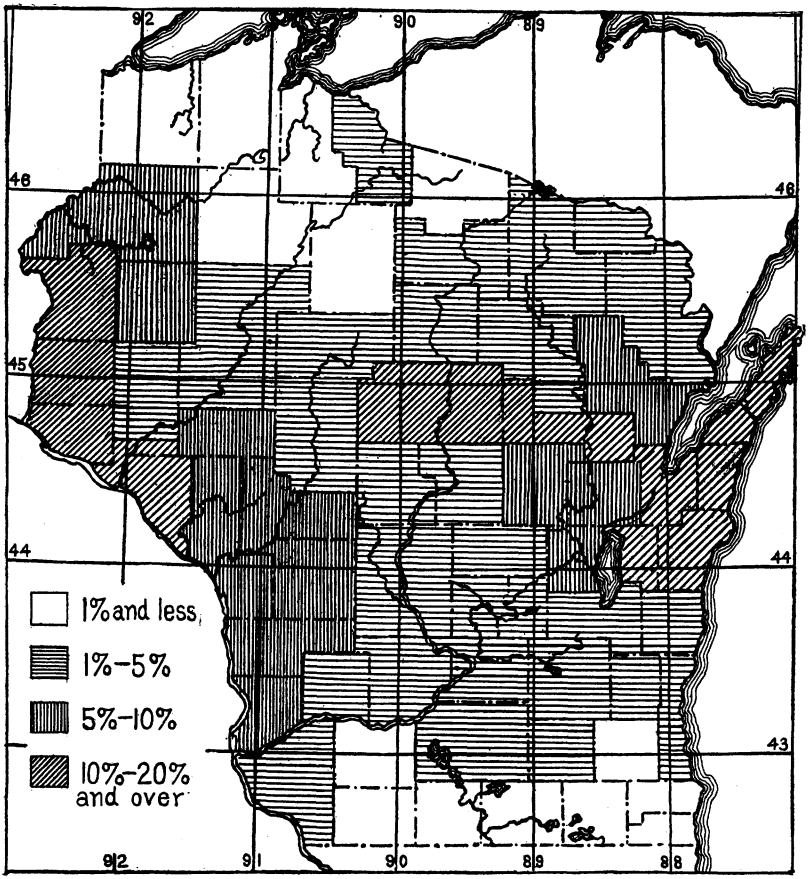

FIG. 26—Percentage of Improved Land in Wheat in 1899. Scale, 1:4,500,000.

---

[19] Spillman, W. J.: Agricultural Production, Rept. Natl. Conserv. Comm., Vol. 3, p. 260.

stant attention, and a much greater degree of intelligence. It is natural, then, that the pioneer farmers should have continued in the less strenuous if more disastrous system to which they were accustomed. How persistently the habit of wheat raising clung to the Wisconsin farmer may be seen in Figures 26 and 27. These maps show a decided decrease over most of the state between 1900 and 1910 in the percentage of improved land devoted to wheat.

The decline of wheat raising was due in part to (1) what was called soil exhaustion, which came as a result of the single cropping. The continued cropping of a piece of ground to the same plant exhausts the soil of the elements which that plant requires in greatest abundance. When rotation of crops is practiced, different elements are drawn upon and the balance of plant food is more nearly maintained. A change of crops also improves the physical condition of the soil, discourages insect pests and prevents other unfavorable conditions. (2) Careless cultivation was also a fault of the early farmer. Plowing was usually shallow and pulverizing imperfect. (3) For many years no fertilizers were used. When the barnyard manure had accumulated to such an extent that it became inconvenient the farmer usually moved his barn, but he did not return the manure to the land where it would have given him a good profit. Straw stacks were commonly burned. This was especially true of the American farmer. The foreigners, however, had learned the value of fertilizers in their old homes and often made use of their knowledge. The secretary of the Wisconsin State Agricultural Society reported in 1869 that "there is less of moving barns to avoid manure piles and of burning straw stacks, but there is still poor farming." (4) About 1860 the cinch bug reached Wisconsin, and while its ravages were probably most disastrous in 1864, it was a menace at any time. (5) The quality of the wheat, which was high during the early days, depreciated greatly and could not compete with the best grades from other regions. (6) The great wheat fields of Minnesota and other western states produced so much wheat of such good quality that in Wisconsin it ceased to be a profitable crop. (7) The railroads reached the western fields in the decade between 1875-1885, and brought their product into the eastern market almost as readily and cheaply as they did the Wisconsin grain.

With the early and repeated failure of the wheat crop, some of the more intelligent farmers turned to diversified farming. They introduced other crops, such as barley, corn, oats, and hay, and also began to accumulate live stock.

Barley was raised at first chiefly in the counties near Milwaukee. In 1850 Waukesha produced 52,369 bushels, or more than one-fourth of the total crop. Walworth was next with 31,599 bushels. In 1860 Rock County took the lead with 102,378 bushels, which was more than one-seventh of the total crop. Dodge County came next with 83,915 bushels. The production of barley did not increase very rapidly until after the decline of wheat raising. In 1870 the total yield was 1,645,019 bushels; in 1880 it was 5,000,000; in 1890, 15,000,000, and in 1909, 22,156,041. A large part of this product went to the Milwaukee breweries, some was used for feed on the farms, and the rest was exported.

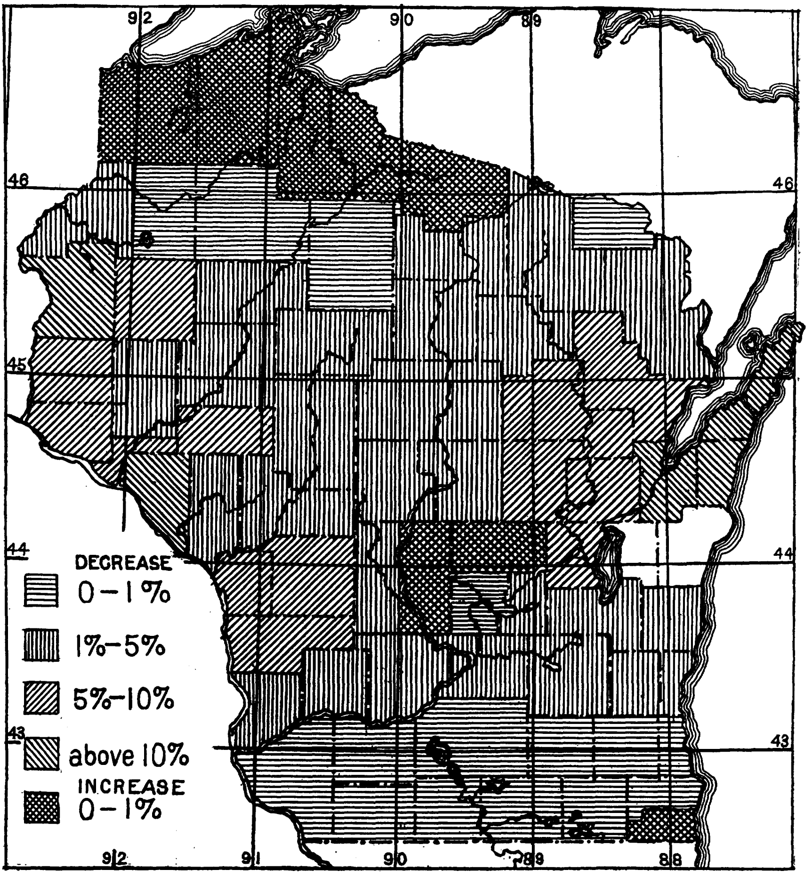

FIG. 27—Change in the Percentage of Land in Wheat from 1899 to 1910. Scale, 1:4,500,000.

The corn crop has increased rapidly with the development of diversified farming. In the report of the Secretary of the Wisconsin Agricultural Society for 1872-1873, he remarked on the large yield and excellent quality of the corn, and added: "This crop must ever be the leading crop of the state for the reason that it not only furnishes excellent and nutritious food for man, but is the crop upon which the farmer must rely to fatten his cattle, hogs, and sheep."

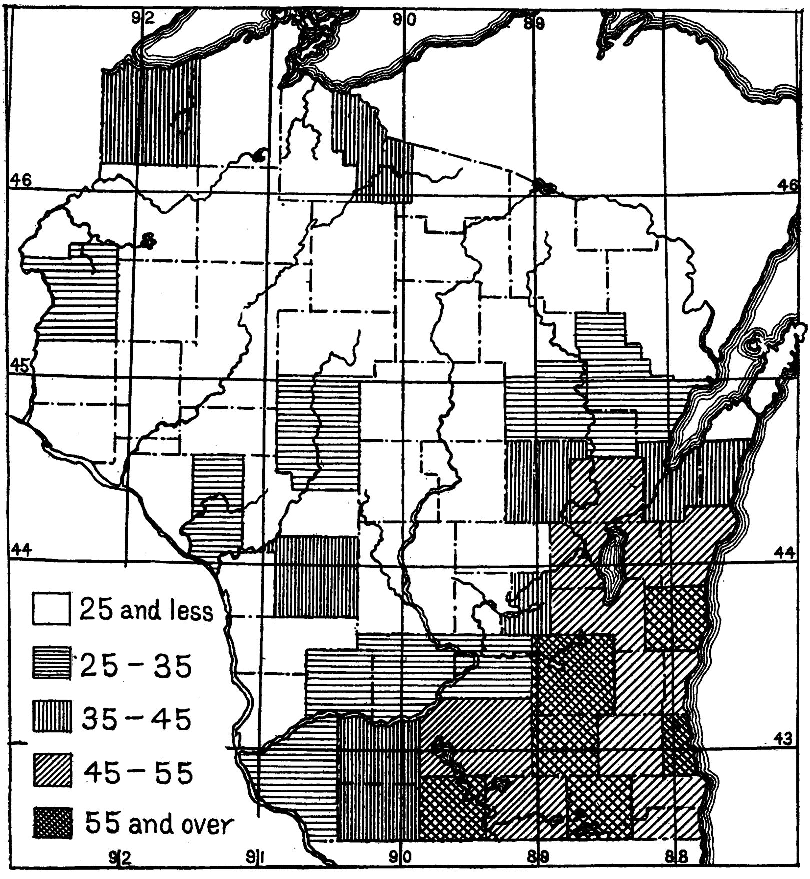

Fig. 28—Numbers of Dairy Cows per Square Mile of Farm Land in 1899. Scale, 1:4,500,000.

He expressed the opinion that it is less exhaustive to the soil than any other general farm crop. In 1869 the yield was 15,033,998 bushels. In 1899 it was 53,309,810 bushels. The yield had increased 3½ times in three decades. In 1909 it was 50,000,000 bushels.

Perhaps the most striking development in agriculture has been along the line of dairy farming. In 1850 Wisconsin had only 64,339 milch cows and 80,000 other cattle. In 1856 and 1857 large quantities of butter were brought into Milwaukee from New York and Ohio. Part of it was consumed there and the rest shipped into the interior of the state. In 1858 Milwaukee exported butter for the first time.[20] In 1905 there were 1,237,910 milch cows in the state, producing 100,418,960 gallons of milk yearly. A part of this was manufactured into 34,620,368 pounds of butter and 1,974,830 pounds of cheese. In 1909 the state had 1,471,591 cows and manufactured 105,307,357 pounds of butter and 145,171,035 pounds of cheese. The growth of the dairy industry was especially rapid

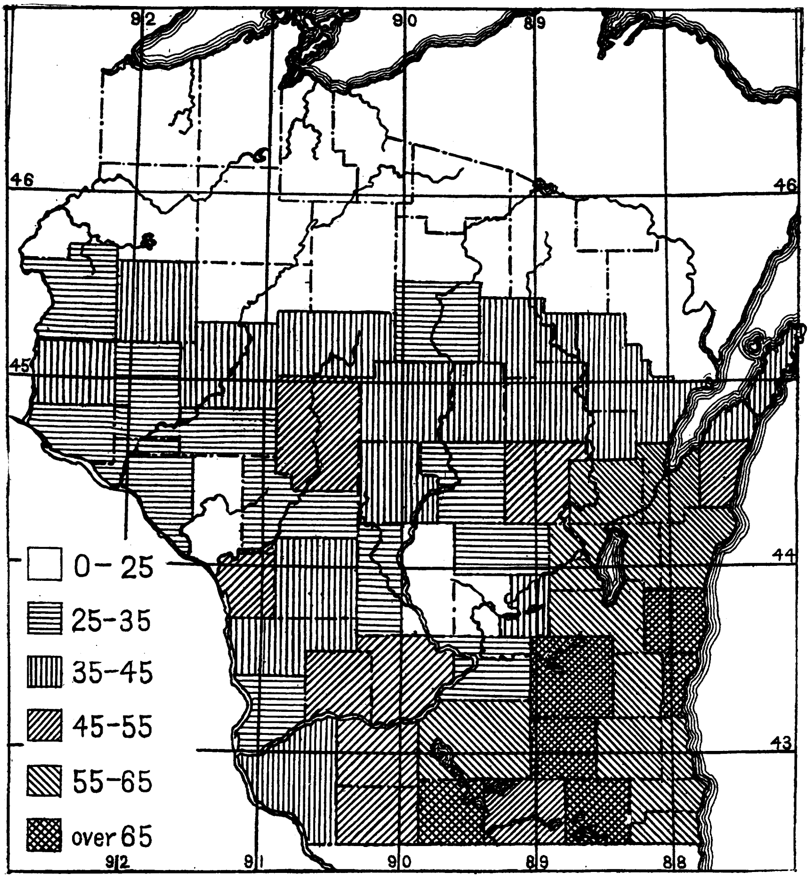

FIG. 29—Number of Dairy Cows per Square Mile of Farm Land in 1909. Scale, 1,4:500,000.

---

[20] *Hunt's Merchants' Magazine*, Vol. 41, p. 310.

between 1900 and 1910, in the north-central and western parts of the state (Figures 28 and 29). In 1900 few of these counties had 25 cows to the square mile of farm land. In 1910 Adams, Marquette, and Trempealeau Counties were the only ones with so low an average, while Sauk, Richland, La Crosse, Waupasa, Clark, and Kewaunee Counties had from 45 to 50 cows to the square mile of farm land.

The number of creameries and cheese factories increased rapidly between 1900 and 1905. Shawano County had an increase of 40 factories and 4 creameries; Marathon, 9 factories and 4 creameries; Clark, 10 factories and 11 creameries.[21] Between 1905 and 1909 there was a total increase of 238 cheese factories and an increased product of 5,280,903 pounds of cheese. The actual number of creameries was decreased by 52 in the same time, but the amount of butter manufactured was increased by 16,902,973 pounds.[22]

Dairying was revolutionized by the Babcock Milk Tester, which was invented by Dr. S. M. Babcock of the University of Wisconsin in 1890. This invention makes it possible to determine with accuracy the amount of butter-fat contained in milk. Milk is sold according to the amount of butter-fat it contains, thus eliminating fraud and encouraging the keeping and breeding of high grade dairy cows. In 1899 and 1905 Wisconsin ranked second in the production of butter, cheese, and condensed milk. It ranked fourth in 1899 in the number of dairy cows and in the amount of milk produced.

With the increase in the number of domestic animals came an increase in the importance of the hay crop. In 1909 the counties of Dane, Grant, Dodge, Iowa, Lafayette, Vernon, Marathon, Fond du Lac, St. Croix, Manitowoc, and Rock, produced one-fourth of the total quantity. Some of the smaller eastern counties devoted a larger percentage of the farm land to hay, as, for example, Racine had 39 per cent. of the farm land in hay, Milwaukee 29 per cent., Ozaukee, Keewaunee, Door, Jefferson, 20 per cent., Waukesha 24 per cent. Most of the north central counties devote from 10 to 17 per cent. of their total farm land to hay.

Wisconsin is well adapted to the dairy business for several reasons. The cool climate and pure water furnished an abundance of cheap ice, and make the production and preservation of butter and cheese relatively easy. The grasses are very nutritious, whether in the form of green pasture or hay, and they are also very abundant. The corn crop is sufficiently large to furnish food in the form of both grain and silage. Root crops grow readily and can be made to furnish fresh food over winter.

---

[21] Russell, H. L., and Boer, U. S.: Development of Factory Dairying in Wisconsin, *23d Ann. Rept. Agric. Exp. Sta. Univ. Wis.*, p. 104.

[22] *Univ. Wis. Agric. Exp. Sta. Bull. No. 210*, pp. 28, 29, 30.

Two crops that are of great importance locally are tobacco and cranberries. Tobacco was raised by the Indians when the white men came to Wisconsin. The latter began its cultivation probably as early as 1838.[23] The fact that it represented large value in small bulk recommended it to a few, but its cultivation was very limited for years. In 1850 the yield was reported as 1,268 pounds, and in 1860 as 87,340 pounds, of which Walworth County produced 26,400 and Rock County 23,340. When the value of the Wisconsin leaf as a wrapper was recognized a considerable demand was created for it. Another impetus was given to the industry by the scarcity of tobacco during the Civil War. In 1870 there was a yield of 906,813 pounds, of which Rock County produced two-thirds and Rock and Dane Counties together produced eight-ninths. In 1909 the yield was 46,909,182 pounds from 40,000 acres, valued at 3.8 million dollars.

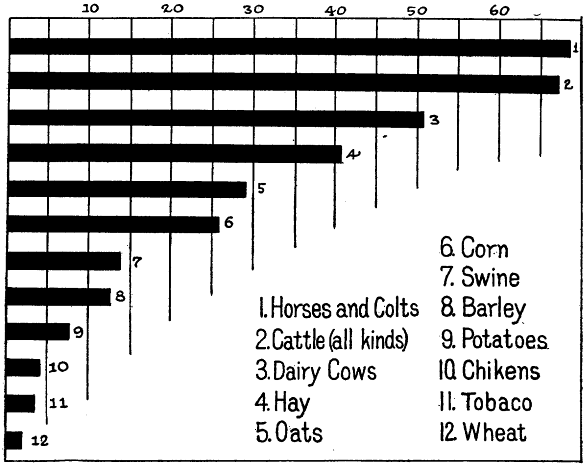

Fig. 30—Value (in Million Dollars) of Farm Products in 1909.
(*Erratum.* Captions 10 and 11 should read "Chickens" and "Tobacco," respectively.)

The quality of the tobacco varies greatly with the soil. Calcareous, sandy soil produces the choicest tobacco. It usually produces a leaf that is light and uniform in color, thin, silky, and elastic. The plant matures nearly a week earlier than on other soils. The clay soils are apt to yield a coarse, thick leaf of uneven color. The lighter the clay, the better the tobacco. The more sandy prairie soils produce a good quality of tobacco, but the clay prairie soils are unfitted for this crop. Good crops of tobacco require rich fertilization of the soil at a considerable cost. Both barnyard manure and commercial fertilizers are used. The tendency of many tobacco growers is to concentrate all the fertilizers on the tobacco fields at the expense of the other farm crops.

---

[23] Hibbard, B. H.: Agriculture in Dane County, *Bull. Univ. Wis. No. 101*, p. 155.

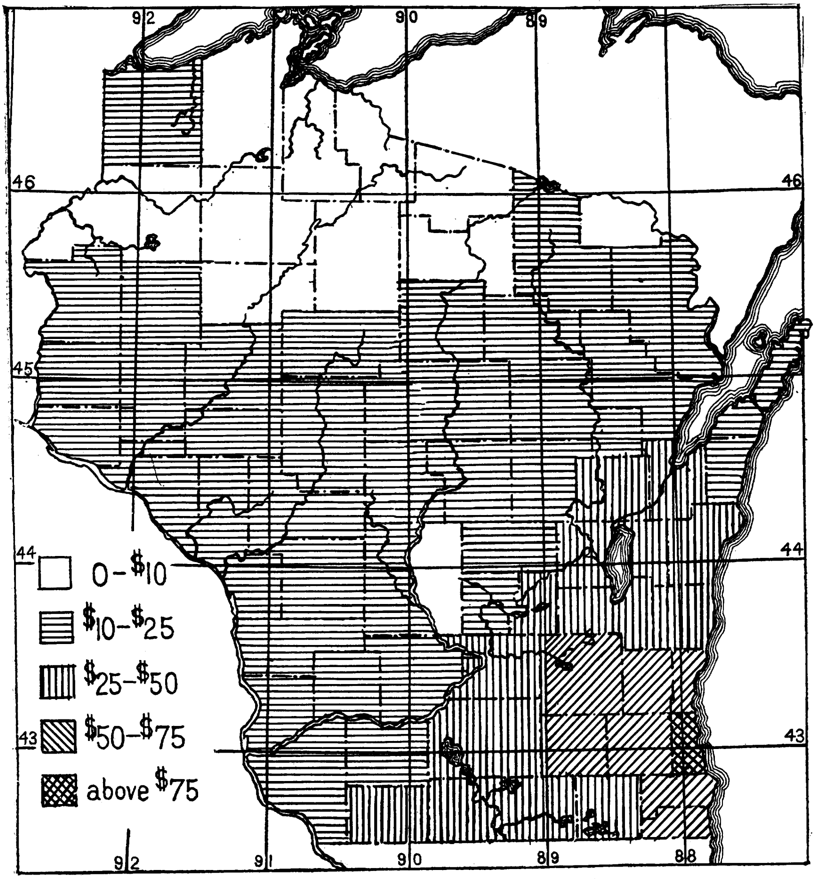

FIG. 31—Average Value of Farm Land per Acre in 1899. Scale, 1:4,500,000.

The cranberry is indigenous in Wisconsin and is found chiefly in the marshes north and west of the Fox and Wisconsin Rivers. In the early days the Indians gathered and marketed the crops. As the white men extended their settlements into the region of the cranberry marshes, they took up the industry. In 1858 7,744 barrels of this fruit were shipped from Milwaukee. Gradually a system of irrigation and drainage was developed by which the marshes could be flooded when necessary for the growth of the plant and as a protection against frost and insects.

The yield of cranberries in 1870 was 11,000 barrels, valued at $120,000. In 1900 Wisconsin ranked third, with a yield of 111,098 bushels. This was 11.2 per cent. of the total crop of the United States. There were reported 5,821 acres of cranberry bog with an average yield of 19 bushels. The average for Massachusetts was 117 bushels per acre. The low average yield of Wisconsin was due to the inclusion in the total average of new bogs not yet bearing;

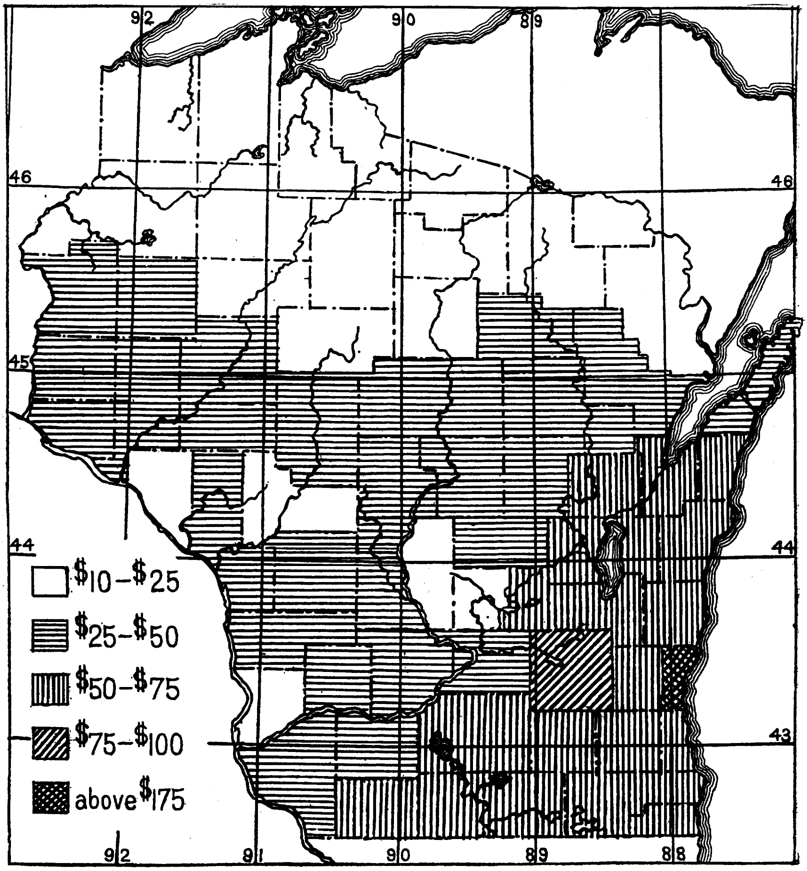

FIG. 32—Average Value of Farm Land per Acre in 1909. Scale, 1:4,500,000.

to injury to the crop by blight, frosts, insects, and other causes; and to lack of care and cultivation. Jackson, Waushara, and Wood Counties produce the bulk of the crop.

Cranberry culture probably will not be a permanent occupation in Wisconsin. As population increases, the marshes now supporting this plant will be of more value drained and planted to crops having a higher food value.

The comparative value of live stock and crops in 1909 is shown in Figure 30. Horses rank first, cattle, including dairy cows, second, and dairy cows third. Hay is the most valuable cultivated crop. Oats and corn rank fifth and sixth respectively, while wheat, which was once the mainstay of the farming population, is of less value than either tobacco or chickens.

With increase in population and more complete utilization of land the average value per acre of farm land increases. Figures 31 and 32 show the average value per acre of farm land for 1899 and 1909. There has been an increase of from $7.50 to $33.05 an acre except in the case of Douglas County, where the average increase was only $3.41 an acre. The greatest actual increase occurred in the older counties. Green, Lafayette and Dane Counties show an increase of over $30 an acre, Brown, Calumet, Chippewa, Dodge, Door, Rock, and Walworth of over $20 an acre.

On the other hand, the percentage of increase on all farm property is much greater in the newer counties. Forest County shows an increase of 709.3 per cent.; Bayfield, 421.4; Washburn, 408.4; Vilas, 359.5; Sawyer, 312.9; Douglas, 287. Of the older counties Sauk had the remarkable increase of 312 per cent., but Milwaukee had only 11.4 per cent.; Jefferson, 35.8; Washington, 28.3; Waukesha, 33.4; and Grant, 61.3.

The influence of a city on property values is apparent near Milwaukee and in Calumet, Winnebago, Brown, and Outagamie Counties which contain the manufacturing towns along the lower Fox River.

(To be concluded)